strength to hold the tube against pressure, but without appreciably distorting the inside tube diameter or reducing the wall thickness. The gripping member must also form a pressure seal against the fitting body.

(e) For fluid services, other than hydraulic systems, using a combustible fluid as defined in §30.10–15 of this chapter and for fluid services using a flammable fluid as defined in §30.10–22 of this chapter, flared fittings must be used; except that flareless fittings of the nonbite type may be used when the tubing system is of steel, nickel copper or copper nickel alloy. When using copper or copper zinc alloy, flared fittings are required. (See also §56.50–70 for gasoline fuel systems, §56.50–75 for diesel fuel systems, and §58.25–20 for hydraulic systems for steering gear.)

[CGD 95–027, 61 FR 26000, May 23, 1996; 61 FR 35138, July 5, 1996, as amended by USCG–1999–5151, 64 FR 67180, Dec. 1, 1999; USCG–2000–7790, 65 FR 58460, Sept. 29, 2000]

§56.30–27 Caulked joints.

Caulked joints may not be used in marine installations.

[CGD 77–140, 54 FR 40606, Oct. 2, 1989]

§56.30–30 Brazed joints.

(a) *General* (*refer also to subpart 56.75*). Brazed socket-type joints shall be made with suitable brazing alloys. The minimum socket depth shall be sufficient for the intended service. Brazing alloy shall either be end-fed into the socket or shall be provided in the form of a preinserted ring in a groove in the socket. The brazing alloy shall be sufficient to fill completely the annular clearance between the socket and the pipe or tube.

(b) *Limitations*. (1) Brazed socket-type joints shall not be used on systems containing flammable or combustible fluids in areas where fire hazards are involved or where the service temperature exceeds 425 °F. When specifically approved by the Commandant, brazed construction may be used for service temperatures up to 525 °F. in boiler steam air heaters provided the requirements of UB–12 of section VIII ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 56.01–2) are satisfied at the highest temperature desired.

(2) Brazed joints depending solely upon a fillet, rather than primarily upon brazing material between the pipe and socket are not acceptable.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65178, Oct. 31, 2008]

§56.30–35 Gasketed mechanical couplings.

(a) This section applied to pipe fittings that form a seal by compressing a resilient gasket onto the pipe joint primarily by threaded fasteners and where joint creep is only restricted by such means as machined grooves, centering pins, or welded clips. Fittings to which this section applies must be designed, constructed, tested, and marked in accordance with ASTM F 1476 (incorporated by reference, see §56.01–2) and ASTM F 1548 (incorporated by reference, see §56.01–2). Previously approved fittings may be retained as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(b) Gasketed mechanical couplings may be used within the service limitations of pressure, temperature and vibration recommended by the manufacturer, except that gasketed mechanical couplings must not be used in—

(1) Any location where leakage, undetected flooding or impingement of liquid on vital equipment may disable the vessel; or

(2) In tanks where the liquid conveyed in the piping system is not chemically compatible with the liquid in the tank.

(c) Gasketed mechanical couplings must not be used as expansion joints. Positive restraints must be included, where necessary, to prevent the coupling from creeping on the pipe and uncovering the joint. Bite-type devices do not provide positive protection against creep and are generally not accepted for this purpose. Machined grooves, centering pins, and welded clips are considered positive means of protection against creep.

[CGD 95–027, 61 FR 26001, May 23, 1996, as amended by USCG–1999–5151, 64 FR 67180, Dec. 1, 1999]